CLAIMS

1. A repair and reinforcement method for preexisting structures, wherein, when a resin is impregnated into a sheet material comprising reinforcement fibers and this resin is cured to form a fiber-reinforced resin layer which is used in the repair and reinforcement of preexisting structures, a reactive mixture having a gelling time of 15 minutes or more at 25°C and which is capable of initiating polymerization even at 5°C, and which is sufficiently curable in a comparatively short period of time (6 hours or less) even at 5°C, and which, moreover, has as chief components thereof a component (1) comprising a monomer having vinyl groups and a component (2), comprising a reactive oligomer having vinyl groups and/or a thermoplastic polymer is employed as the resin.

2. A repair and reinforcement method for ~~preexisting~~ structures in accordance with claim 1, wherein the reactive mixture contains a component (1) comprising at least one type of (meth)acrylate monomer, and a component (2) comprising a reactive oligomer having at least 1 (meth)acrylic group within the molecule and/or a thermoplastic polymer.

3. A repair and reinforcement method for preexisting structures in accordance with one of claims 1 and 2, wherein an organic peroxide which is individually stable at room temperature (the temperature at the place of use or the like), and a curing promoter which makes possible the breakdown of this organic peroxide at room temperature, are added to the reactive mixture.

4. A repair and reinforcement method for preexisting structures in accordance with claim 2, wherein the reactive oligomer contained in the reactive mixture as component (2) comprises a reactive oligomer having at least one (meth)acrylic group and allyl ether group in the molecule.

5. A repair and reinforcement method for preexisting structures in accordance with claim 4, wherein the reactive oligomer contained in the reactive mixture as component (2) comprises a polyester (meth)acrylate containing allyl ether groups which is obtained by the reaction of a polybasic acid, a polyhydric alcohol, an alcohol containing allyl ether groups, and (meth)acrylic acid.

6. A repair and reinforcement method for preexisting structures in accordance with claim 2, wherein the reactive oligomer contained in the reactive mixture as

component (2) comprises an epoxy (meth)acrylate obtained by the reaction of an epoxy resin and (meth)acrylic acid.

7. A repair and reinforcement method for preexisting structures in accordance with claim 4, wherein the reactive oligomer contained in the reactive mixture as component (2) comprises an epoxy (meth)acrylate containing allyl ether groups which is obtained by the reaction of a polybasic acid, an epoxy resin, an alcohol containing allyl ether groups, and (meth)acrylic acid.

8. A repair and reinforcement method for preexisting structures in accordance with claim 7, wherein phthalic acid is used as the polybasic acid, bisphenol A and/or bisphenol F type epoxy resin having an epoxy equivalent of 970 or less is used as the epoxy resin, and pentaerythritol triallylether is used as the alcohol containing allyl ether groups.

9. A repair and reinforcement method for preexisting structures in accordance with claim 2, wherein the reactive mixture has a viscosity of 5 - 10^4 centipoise at 20°C.

10. A repair and reinforcement method for preexisting structures in accordance with claim 2, wherein the

reactive mixture has a viscosity within a range of 5 - 800 centipoise at 20°C.

11. A repair and reinforcement method for preexisting structures in accordance with claim 2, wherein the reactive mixture contains paraffin wax.

12. A repair and reinforcement method for preexisting structures in accordance with claim 1, wherein the sheet material comprising reinforcement fibers comprises a sheet material, wherein a heat-fusible cloth is heat-fused to at least one surface of a sheet material comprising reinforcement fibers oriented in one direction.

13. A repair and reinforcement method for preexisting structures in accordance with claim 1, wherein the sheet material comprising reinforcement fibers comprises a sheet material, in which heat-fusible fibers are disposed at at least one surface of a sheet material comprising reinforcement fibers oriented in a single direction, in a direction perpendicular to that of the reinforcement fibers and with a spacing within a range of 3 - 15 mm in the longitudinal direction of the reinforcement fibers, and are heat-fused to this surface.

14. An anisotropic textile, wherein heat-fusible fibers are disposed at and heat-fused to at least one surface of

a sheet material comprising reinforcement fibers oriented in one direction, oriented in a direction perpendicular to that of the reinforcement fibers and with a spacing within a range of 3 - 15 mm in the longitudinal direction of the reinforcement fibers.

15. An anisotropic textile, employing high strength and highly elastic fibers (reinforcement fibers) having a tensile strength of 3 GPa or more and a tensile elastic modulus of 150 GPa or more as the warp, and fibers having a tensile elastic modulus lower than that of the warp as the weft, wherein the weft threads comprise composite threads having a weight of 0.1 g or less per meter and comprising two types of fibers having a melting point difference of 50°C or more, and the spacing of the weft threads in the warp direction is within a range of 3 - 15 mm, and by means of the low melting point fibers comprising the weft, the warp and weft adhere to one another.

16. An anisotropic textile in accordance with claim 15, wherein the composite threads used as the weft threads comprise composite threads in which high melting point fibers having a tensile elastic modulus within a range of 50 - 100 GPa and a melting point of 200°C or more, and low melting point fibers having a tensile elastic modulus of 50 GPa or less and a melting point of 150°C or less are

unified by the deposition of 0.5 - 10 weight percent of a high molecular compound which melts or softens at temperatures of 150°C or less.

17. A repair and reinforcement method for preexisting structures in accordance with claim 1, wherein the anisotropic textile disclosed in claim 14 is employed as the sheet material comprising reinforcement fibers.

18. A repair and reinforcement method for preexisting structures in accordance with claim 1, wherein the anisotropic textile disclosed in claim 15 is employed as the sheet material comprising reinforcement fibers.

19. An anisotropic textile in accordance with claim 16, wherein the high molecular compound is dissolved in the reactive mixture.